

Application No. 10/635,864
Docket No. 1999U026.US-CON3
Reply to Office Action Dated 02/07/2005

Remarks

Continuation Claims as filed

The claims as filed in the present Continuation Application are supported by the specification as originally filed at, for example, pages 29-31, and are meant to claim certain preferred embodiments described therein. For example, in Claim 1, the density range derives from paragraph [0130], the I_{21}/I_2 range derives from paragraph [0134], the "residual Group 4 metal content" derives from paragraph [0134] "(d)", the Mw/Mn range derives from paragraph [0134] "(a)", the relative amounts of high and low molecular weight components derive also from paragraph [0134] "(e)".

Claims 2-6 derive from the same portions of the specification as do Claim 1, and are narrowed embodiments.

Claims 7-12 derive from the specification as filed at, for example, pages 31-32 of the specification as filed.

Claim 13 derives from the specification as filed at, for example, at paragraph [0013] and from paragraphs [0016] to [0022].

No new matter is believed to be added.

Title

Given the new nature of the current claims, please replace the current title "CATALYST COMPOSITION, METHOD OF POLYMERIZATION, AND POLYMER THEREFROM" with —BIMODAL HIGH DENSITY POLYETHYLENE—.

Abstract

Given the new nature of the current claims, please replace the current Abstract with the one above, derived from Claim 1 as amended.

Application No. 10/635,864
Docket No. 1999U026.US-CON3
Reply to Office Action Dated 02/07/2005

Claim Amendments

Claim 1 is amended to clarify the nature of the bimodal polyethylene. The phrase "high molecular weight component" is replaced with -bimodal polyethylene- and "greater than 100,000" is replaced with -180,000 a.m.u. or more-, derived from paragraph [0134] "(b)".

Claim 3 is similarly amended.

Double Patenting

Claims 1-13 were provisionally rejected under the judicially created doctrine of obviousness double-patenting as being unpatentable over Claims 1-15 of copending Application No. 10/772,823. The Applicant traverses this rejection.

The MPEP § 804 at 800-11 states that the purpose of this type of double patenting rejection is "primarily intended to prevent prolongation of the patent term by prohibiting claims in a second patent not patentably distinguishing from the claims in the first patent." The current application is a "first" patent by this meaning.

The Applicant contends that this rejection is not appropriate here, as the present case is the first application, while the application cited as not patentably distinct is the "second" patent. Applicant will be willing to consider filing such a Terminal Disclaimer in the copending 10/772,823.

Section 112 Rejections, second paragraph

Claims 8 through 10 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. These claims refer to certain features of "a pipe" that is "formed from the polyethylene" that is in Claim 1. The Applicant contends that this relationship between the "pipe" of Claims 8, 9 and 10 and the "polyethylene" is clear. The claims

Application No. 10/635,864
Docket No. 1999U026.US-CON3
Reply to Office Action Dated 02/07/2005

state that the features are related to the pipe being made from the polyethylene of the claim to which it depends.

For example, Claim 8 states in part "a pipe with carbon black formed from the polyethylene", where "the polyethylene" has antecedent basis to the preamble of Claim 8 and to Claim 1.

Thus, Applicant requests that this rejection be withdrawn.

Section 102/103 Rejection

Claims 1 through 13 were rejected under 35 U.S.C. § 102(b) as anticipated over *Martin et al.* (US 5,306,775) or in the alternative, under 35 U.S.C. § 103(a) as obvious over *Martin et al.* ("*Martin*"). The Applicant traverses this rejection.

Martin is directed to a two component polyolefin system comprising a "low molecular weight polyethylene resin" and a "high molecular weight polyethylene resin". The low molecular weight polyethylene resin "can be any new or recycled ethylene resin. However, it is preferred if the low molecular weight ethylene polymer is a homopolymer. This is because of the better stiffness that can be imparted to the ethylene blend by this ethylene component." (col. 4, lines 13-18). In the working example blends of *Martin*, all of the low molecular weight components are ethylene homopolymers. In fact, the text of the discussion in *Martin* stresses the importance that the low molecular weight component be a "homopolymer". (col. 8, lines 31-47).

Applicant, on the other hand, claims a "bimodal polyethylene comprising ethylene derived units and units derived from at least one of a C₄ to C₁₂ olefin" that does comprise "a high molecular weight component and a low molecular weight component". The low molecular weight component in the claimed embodiment of the present application is a copolymer, and not a homopolymer. Nonetheless, the Applicant has found the "bimodal

Application No. 10/635,864
Docket No. 1999U026.US-CON3
Reply to Office Action Dated 02/07/2005

polyethylene" of the present invention has enough stiffness to be suitable for such articles as pipes and films.

To confirm that the "bimodal polyethylenes" as claimed are entirely comprised of copolymer, that is, both components include at least some amount of C₄ to C₁₂ olefin-derived units, the Applicant herein submits a Declaration of Tae Hoon Kwalk, attached.

Also, there is no indication that *Martin* discloses polyethylenes having an "I₂₁/I₂ of 80 or more", and in fact, the working example blends in *Martin* are all below this range.

Furthermore there is no indication that the *Martin* discloses "a residual Group 4 metal content of 2.0 ppm or less" in its polyethylene compositions, or that the "bimodal polyethylene has a weight average molecular weight Mw of 180,000 a.m.u. or more". While it is true that the disclosure of *Martin* is broad, as are other disclosures before the Examiner, the Applicant is claiming a non-obvious species of a large genus that has certain advantages. The low residual level is always an advantage for end use products, as the products tend to have a better appearance and less decomposition over time when there is less contamination from the catalyst residue. Also, the relatively high molecular weight is an advantage to the end properties of the products made by the polyethylenes of the present invention such as stiffness, etc.

As for the objected-to product-by-process claim, this is allowable as long as the base claim to the composition itself is allowable, which the Applicant contends is now the case.

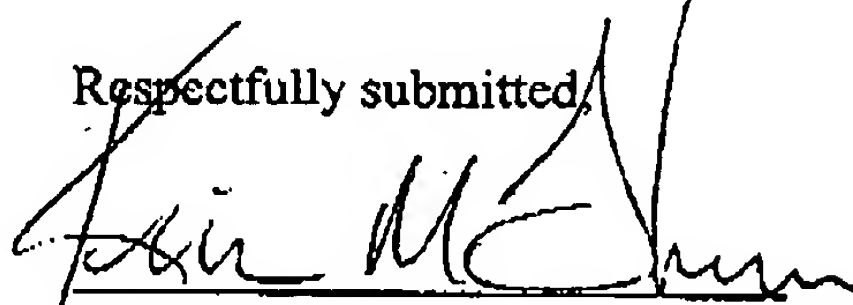
Application No. 10/635,864
Docket No. 1999U026.US-CON3
Reply to Office Action Dated 02/07/2005

Thus, the Applicant submits that *Martin* does not anticipate or render obvious Applicant's claimed invention, and requests that the rejection over *Martin* be withdrawn.

Date

3/1/05

Respectfully submitted,



Kevin M. Faulkner

Attorney for Applicants

Registration No. 45,427

Univation Technologies, LLC
5555 San Felipe, Suite 1950
Houston, Texas 77056-2723
Phone: 713-892-3729
Fax: 713-892-3687